January 30, 2003

TO: Internal File

THRU: Karl R. Housekeeper, Team Lead

FROM: Gregg A. Galecki, Senior Environmental Specialist, Hydrology

RE: Modifications to Appendix 7-4 - Sedimentation and Drainage Control Plan , West Ridge Resources, Inc., West Ridge Mine, C/007/041 – AM03A, Carbon County, Utah, Internal File

SUMMARY:

The following technical memo is a review of information submitted by West Ridge Resources, Inc. (Operator) to the Division of Oil, Gas, and Mining (Division) on January 17, and January 28, 2003, to amend Appendix 7-4, the Sedimentation and Drainage Control Plan. The proposed modifications were submitted as a proposed abatement response to Notice of Violation (NOV) N02-49-2-1. NOV N02-49-2-1 was serviced November 19, 2002, by Inspector Karl R. Housekeeper in response to the Operator diverting mine-water through disturbed-area culverts and ditches, and storing mine-water in the Sedimentation pond. The current Utah Pollutant Discharge Elimination System (UPDES) permit indicates outfall number 001 is for discharge of the Sedimentation Pond that drains the disturbed area and associated facilities area. Outfall number 002 is for discharge of mine-water directly to the C Canyon drainage/Grassy Trail Creek. The review is solely from a hydrologic prospective and addresses only the hydrologic regulations pertinent to the amendment. Additional modifications need to be made to the chapter 7 and appendix 7-4 of the currently approved Mining and Reclamation Plan (MRP), prior to Division approval.

TECHNICAL ANALYSIS:

GENERAL CONTENTS

PERMIT APPLICATION FORMAT AND CONTENTS

Regulatory Reference: 30 CFR 777.11; R645-301-120.

Analysis:

The following spelling and pagination errors Appendix 7-4,which when corrected will help clarify the body of the text:

- Appendix 7-4, Table of Contents (TOC), Section 2.13 has been added and the listed pages are incorrect for the majority of the table. Also in the TOC, Figure 6A is not listed, Figures 8 through 11 do not correspond with the Figures as they exist in the MRP
- Appendix 7-4, page 2, has no title to page
- Appendix 7-4, page 3 is blank without explanation
- Appendix 7-4, Page 38, the figures numbers do not correspond to existing figures.
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Findings:

Information in the proposal is not adequate to meet the requirements of the General Contents section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-121.200, Provide the requisite information and modifications, as cited above.

REPORTING OF TECHNICAL DATA

Regulatory Reference: 30 CFR 777.13; R645-301-130.

Analysis:

The amendment submitted to the Division on January 17, 2002, Appendix 7-4 Tables 1 through 11 and 20 through 23 have been modified when compared to the same tables in the currently approved MRP. The tables located in the approved MRP are dated 01/99, while the same tables provided in the current amendment are dated 12/02. There is no indication that the

modifications noted in these tables were approved by the Division and incorporated into the MRP. The Operator needs to update the currently-approved MRP with Appendix 7-4 Tables 1 through 11 and 20 through 23, and the tables should supply an accurate date of when the tables were modified and approved for incorporation into the MRP.

Also within Appendix 7-4, any tables that represent as-built information should indicate it is as-built information. As an example, Table 15 – Disturbed Culvert Design Summary, 'Recommended' Construction Diameter should indicate as-built information.

Findings:

Information in the proposal is not adequate to meet the requirements of the General Contents section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-133.100, Appendix 7-4 Tables 1 through 11 and 20 through 23 need to be incorporated into the currently-approved MRP and reflect an accurate amendment date.

R645-301-133.100, Modify Appendix 7-4 Tables to indicate as-built information were appropriate.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

CLIMATOLOGICAL RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.18; R645-301-724.

Analysis:

During the mine permit midterm review, conducted during the fall season 2001, the Operator committed to installing a precipitation gauge that would monitor precipitation events and would be submitted on an annual basis. A precipitation gauge was installed on November 14, 2001. At the time of this analysis, the precipitation data for 2001 and 2002 has not been submitted however, it is anticipated this information will be included in the 2002 annual report.

Depending on how accurate the precipitation information has been documented, the Division reserves the request to require the submittal of more information. This becomes more important with the current proposed amendment because UDPES Discharge Point 001 will now be conveying mine-water discharge, in addition to the disturbed area runoff, as was originally designed. The additional information may include the use of 'Best Technology Currently Available' (BTCA) and request a total-weather station be installed to record data continuously (models are available in the $300 - $700 range).

Findings:

Information in the proposal adequately meets the minimum requirements of the Environmental Resource Information – Climatological Resource Information section of the regulations.

OPERATION PLAN

HYDROLOGIC INFORMATION

Regulatory Reference: 30 CFR Sec. 773.17, 774.13, 784.14, 784.16, 784.29, 817.41, 817.42, 817.43, 817.45, 817.49, 817.56, 817.57; R645-300-140, -300-141, -300-142, -300-143, -300-144, -300-145, -300-146, -300-147, -300-147, -300-148, -301-512, -301-514, -301-521, -301-531, -301-532, -301-533, -301-536, -301-542, -301-720, -301-731, -301-732, -301-733, -301-742, -301-743, -301-750, -301-761, -301-764.

Analysis:

Acid- and Toxic-Forming Materials and Underground Development Waste

In Section R645-301-731.300 of the MRP (pg7-28) the Operator makes the commitment that 'any emulsion fluid spill underground would go to an underground sump where water is stored and reused underground'. The Operator needs to address this statement and correctly identify how this situation is going to be handled with the current amendment.

Water-Quality Standards And Effluent Limitations

The submittal of the currently proposed amendment affects the routing/process of the two UPDES Discharge Points within the currently approved permit. The current UPDES permit (expires April 2003) maintains the same water quality standards / effluent limits at both discharge points, and the Operator commits to maintaining those standards within this amendment.

Sediment Control Measures

As an added Sediment Control Measure the current amendment has been proposed. Current testing of the mine-water discharge indicates the water would not meet effluent limitations. The current amendment proposes routing mine-water discharge through the Sedimentation Pond. This routing is outlined in Section 1e) of the Sedimentation and Drainage Control Plan - Appendix 7-4. Section 1e) and Section 2 require the following text modifications:

- The statement of 'water is pumped from the mine at approximately 230 gpm' needs to be clarified to indicate that 230 gpm is the maximum flow that the ditches can handle and still provide enough capacity for a 10-year/24-hour storm event and ½-foot freeboard.
- Describe how water is conveyed from the mine portal to ditch DD-5
- Describe how water will be routed into culverts DC-8AR. As an example, if DC-8A is completely blocked to divert water to ditch DD-12 and Pond B, ditch DD-12 needs to be equal in size to ditch DD-11. This is in the event that the designed-storm occurs, and ditch DD-12 is required to convey all the necessary flow to the sedimentation pond.
- A statement indicating the discharge of mine-water, in excess of 230 gpm, will not occur. This statement is to ensure a 10 year – 24 hour designed storm event capacity will be maintained in the ditches at all times.
- Culvert DC-8AR is sized to carry mine-water discharge only (according to Table 15), this is in direct conflict with statements made on page 10 of Appendix 7-4 ('adequately sized to carry required runoff in addition to mine-water')
- The sentence added to page 11a of Appendix 7-4 describing ditch-sizing needs to be modified to indicate ditches carrying mine water are adequately sized to carry mine water, <u>in addition to maintaining adequate storage to contain the required runoff from a 10 year-24 hour precipitation event and 0.5-feet freeboard at all times.</u>

Siltation Structures: Sedimentation Ponds

In Section R645-301-742 – Sediment Control Measures of the MRP (page 40), the Operator commits to monitoring sediment levels with a marker in the pond and removing sediment at the 60 % volume level. The Operator needs to include a statement that commits to monitor the water level with a marker and removing water at the 100% sediment volume level.

Discharge Structures

Appendix 7-4 Table 15 – Disturbed Culvert Design Summary, indicates culvert DC-12 is a 1.5-foot culvert with a flow capacity of 21.59 cfs. In the event that all the flow is diverted from ditch DD-8A, culvert DC-8AR needs to maintain the equivalent peak flow capacity of culvert DC-11, which is 24.56 cfs (according to Table 15).

Appendix 7-4 Section 3.1g) (pg. 40) indicates mine-water will utilize only the "dead" or sediment storage volume (100 % marker) of the Sediment Pond cells, at which point it will be discharged into the C Canyon drainage according to the UPDES Discharge Permit. A similar statement addressing the pumping of mine-water needs to be provided in Appendix 7-4 Section 1e). A statement describing the changes in storage and function (knowledge of the process) of the Sediment Pond must also be included in Section R645-301-733 – Impoundments of the approved MRP.

Section R645-301-733.130 – Impoundments (pg 7-34) indicates Cell B of the Sedimentation Pond will be supplied with a steel-constructed walkway to access the UPDES Discharge Point 001 (Principle Spillway – 36" C.M.P. culvert riser and oil skimmer). With the increased likelihood that both Cell A and Cell B of the Sedimentation Pond will be retaining water in the future, it is prudent to construct the walkway prior to water saturating the Cell B embankment.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

Analysis:

Mining Facilities Maps

Map 7-2, Mine Site Drainage map, submitted January 28, 2003, is missing a few important items. UPDES discharge point 002, Mine discharge directly into the C Canyon drainage, is not located on the map. Also, text indicates that mine water is being conveyed from the mine to the sedimentation pond beginning at ditch DD-5. Neither the text nor the map indicates how mine water is conveyed from the mine portal to ditch DD-5.

Also on Map 7-2, an area outlined with a copper-colored line, and extending up from the property gate is not identified. It is not clear whether it is included in area ASCA-W. This area needs to clearly identify any water treatment (if any) that exists.

Findings:

Information in the proposal is not adequate to meet the requirements of the Operation Plan – Maps, Plans, and Cross Sections of Mining Operations section of the regulations. Prior to final approval, the applicant must supply the following information in accordance with:

R645-301-521.124, Map 7-2 needs to illustrate the location of UPDES discharge point 002, and illustrate how water is being conveyed from the mine portal to ditch DD-5.

R645-301-731.121, Identify the type of treatment (if any) that is outlined as extending from the property gate to ASCA-W and ASCA-Z.

R645-301-731.300, In the absence of an underground sump, address on page 7-28 how emulsion fluid spills will be handled underground.

R645-301-742.100, Make the requisite text changes/modifications to Sections 1 – Introduction and Section 2 – Design of Drainage Control Structures of Appendix 7-4 as outlined in the **Sediment Control Measures** section items 1-6 of this technical analysis.

R645-301-742.100, Include a statement that commits to monitor the water level with a marker and removing water at the 100% sediment volume level.

R645-301-742.100, In the event that all the flow is diverted from ditch DD-8A, culvert DC-8AR needs to maintain the equivalent peak flow capacity of culvert DC-11, which is 24.56 cfs (according to Table 15).

R645-301-742.100, Appendix 7-4 Section 1e) and MRP Section R645-301-733 need to include statements indicating the use of 'dead storage' and the changes in storage and function of the Sedimentation Pond.

R645-301-733, Construct the walkway to access UPDES Discharge Point 001 as outlined in Section R645-301-733.130 of the currently approved MRP.

RECOMMENDATIONS:

Approval of the application by the Division is not recommended until the requisite deficiencies, cited above, are adequately addressed.